
EWA Development Report

Presented at the
CALFED Policy meeting
August 12, 1999



Outline

- Review of EWVA
- Computer Simulation and Evaluation of EWVA Options
- General Conclusions
- EWVA Implementation Issues
- Final EWVA Structure Development Process



Environmental Water Account (EWA)

- **Concept**
 - Flexible management of water operations could achieve fishery and ecosystem benefits more efficiently than a completely prescriptive regulatory approach.
- **Intent**
 - To provide flexibility to achieve environmental benefits and to provide certainty (ESA and other regulatory assurances) to water users and continuous improvement to water supply reliability and water quality benefits.



EWA Primary Uses

- Reduce Entrainment
- Ecosystem Protection
- Guidance for migratory fish

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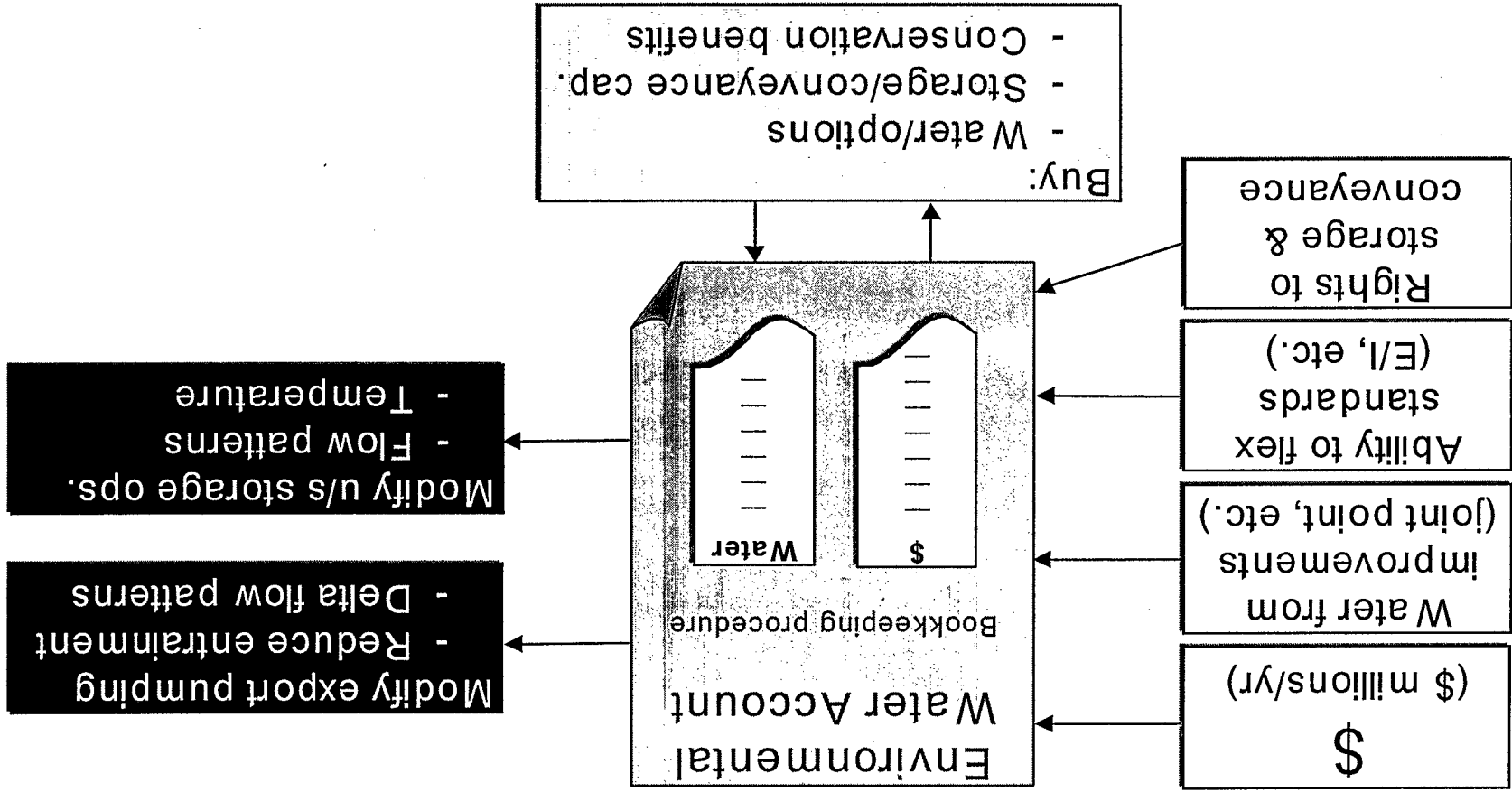
Benefits of EWA Water

- Evaluate the overall level of fishery protection which would likely be achieved from a range of prescriptive standards/EWA combinations.
- Describe the range of scientific supporting hypotheses for the EWA and other CALFED fishery actions.



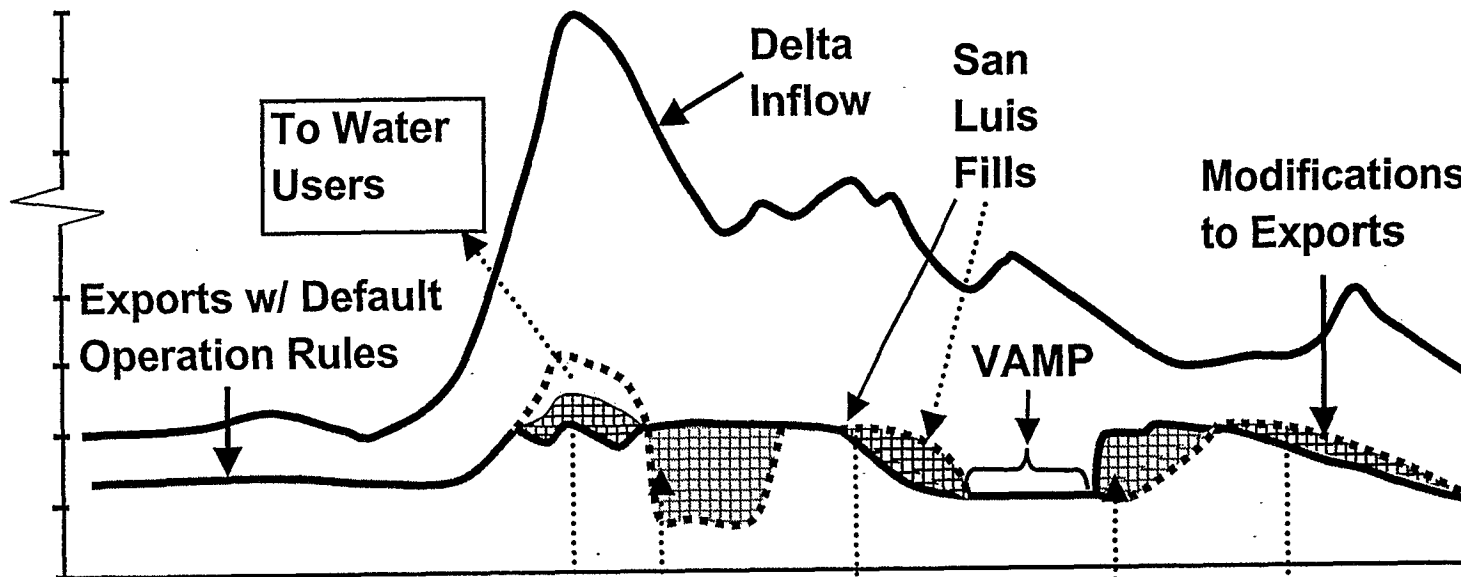
Environmental Water Account

Funded by: (\$ and Water)
Use to protect fish: (Contracts & Gal. Per Gal. Exchanges)

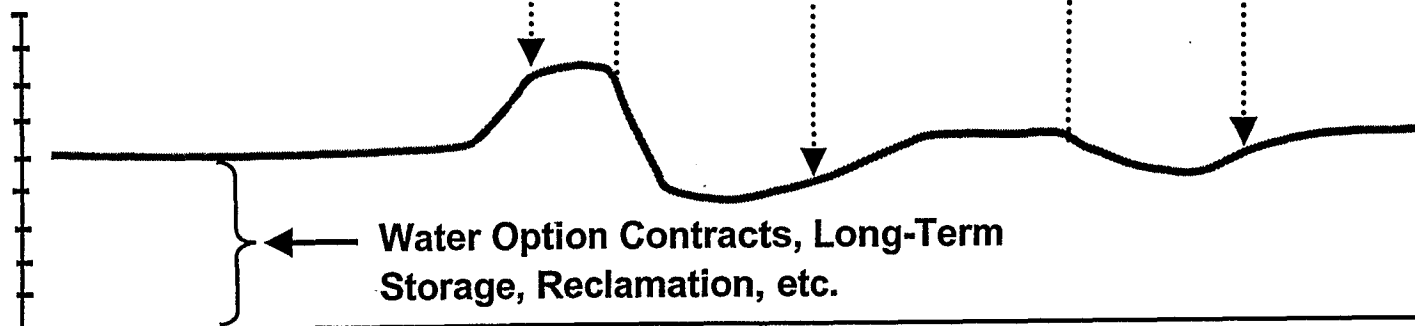


EXAMPLE USE OF ENVIRONMENTAL WATER ACCOUNT

Delta Inflow and Exports



Environmental Water Account



Simulation Process

- Select Baseline
- Select Early and Late Stage 1 EWA Assets
 - Monetary
 - Facilities
- Establish Operational Rules
- Run Daily Simulations
- Evaluate Impacts/Benefits



Simulated Early Stage 1 Assets

- South Delta Program - 8,500 cfs, Temporary barriers in.
- JPOD
- E/I, In-Delta AFRP Variances
- Ground Water (400 TAF; 40 TAF/Mo. in-out)
- Shasta Enlargement (50 TAF)
- Water Purchase (NOD, SOD, spot market) -- \$40m/yr.
- San Luis Storage Borrowing
- Unused System Capacities
- Demand Shifting (100 TAF/yr)

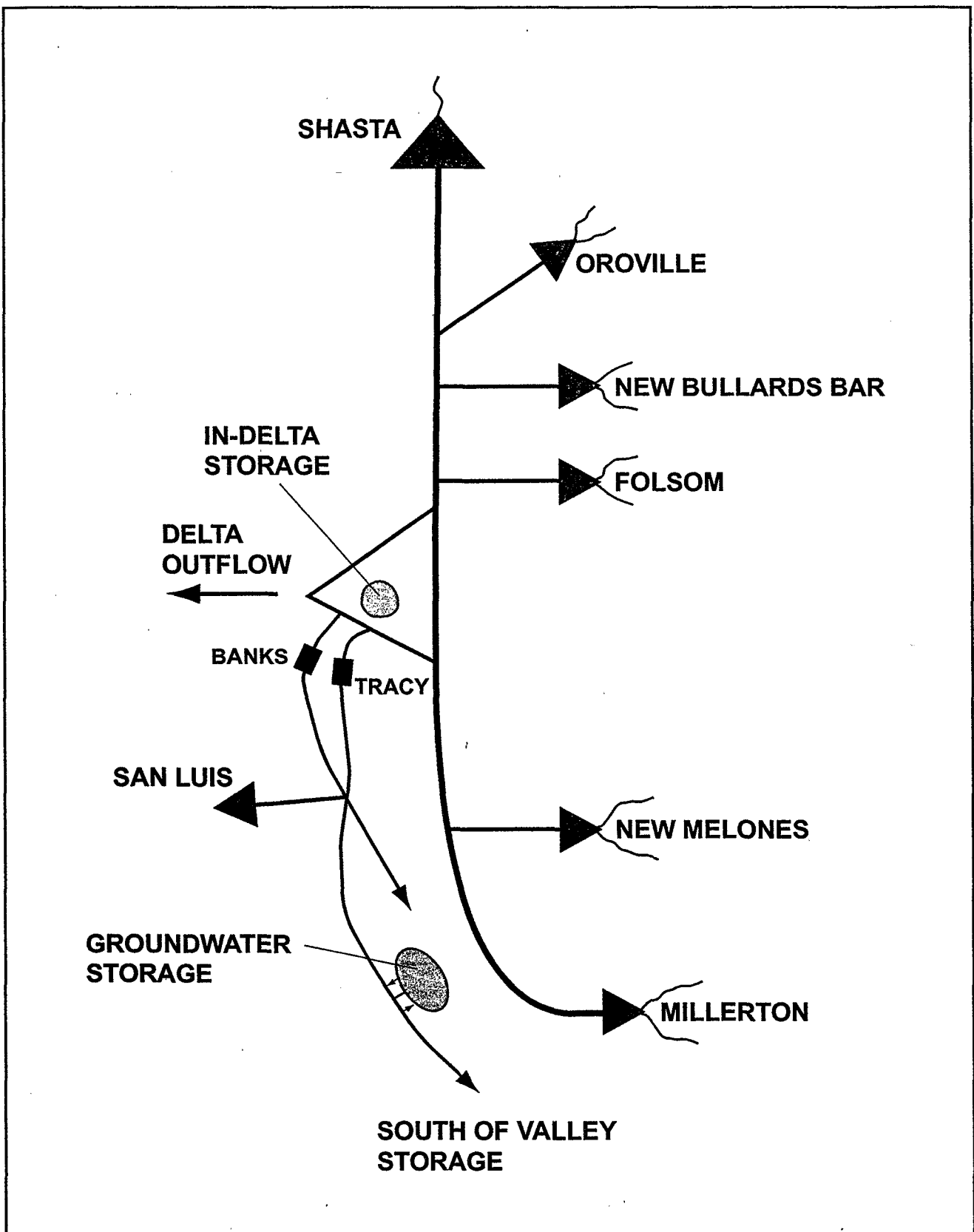


Simulated Late Stage 1 Assets

- Expanded Banks - 10,300 cfs
- JPOD
- E/I, In-Delta AFRP Variances
- Ground Water (600 TAF; 60 TAF/Mo. in-out)
- Shasta Enlargement (50 TAF)
- Webb Tract Storage (120 TAF, 2,000 cfs. in-out)
- Bacon+ Storage/Connected (200 TAF, 4,000 cfs in; 2,000 cfs. out)
- ET Reductions on Delta Islands (60TAF / year)
- Water Purchase (NOD, SOD, spot market) -- \$30m/yr.
- San Luis Storage Borrowing
- Unused System Capacities
- Demand Shifting (100 TAF/yr)

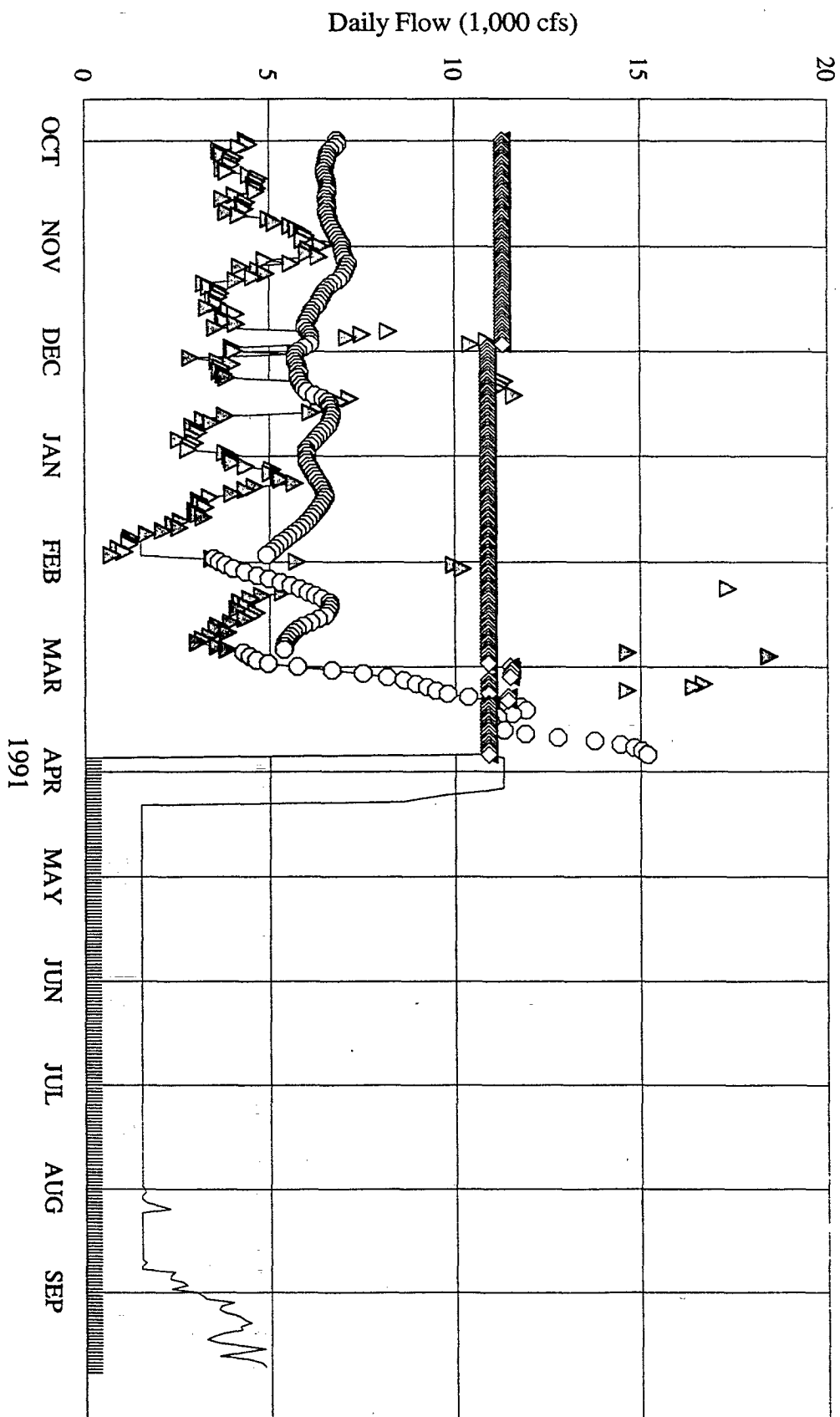


EWA Simulation Diagram

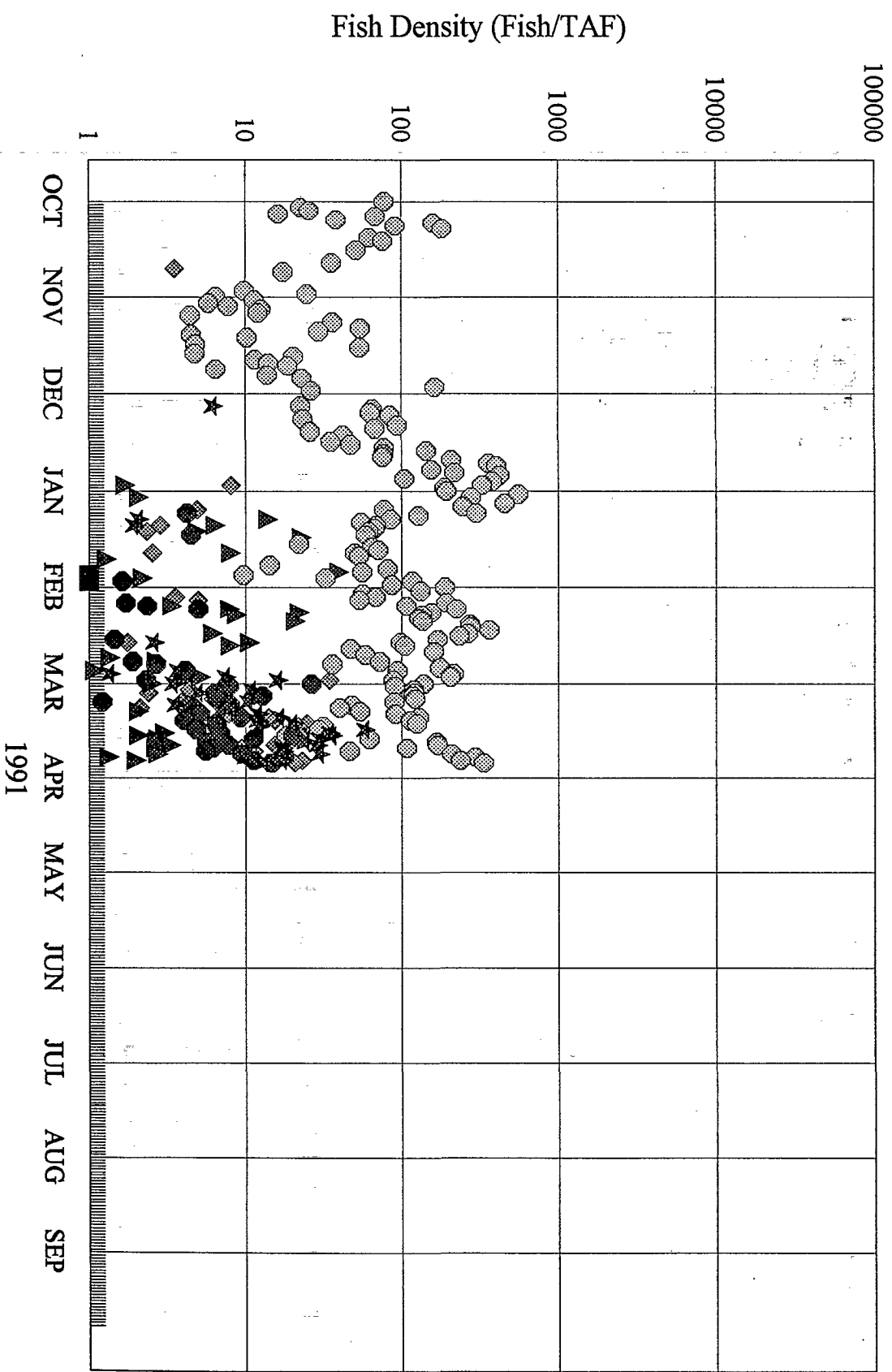


Delta Export Limits

1991 Game 4

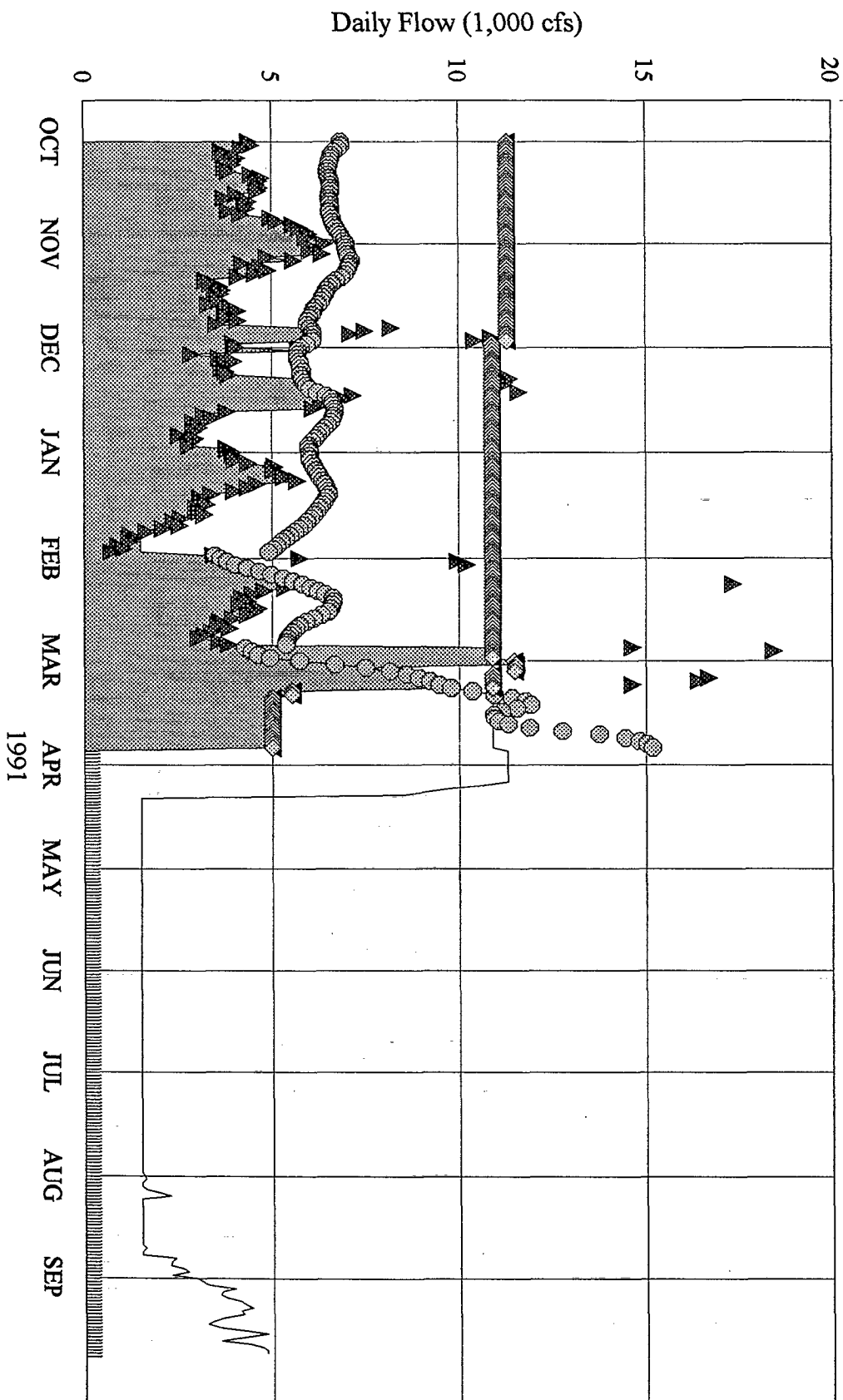


SWP Fish Density Pattern



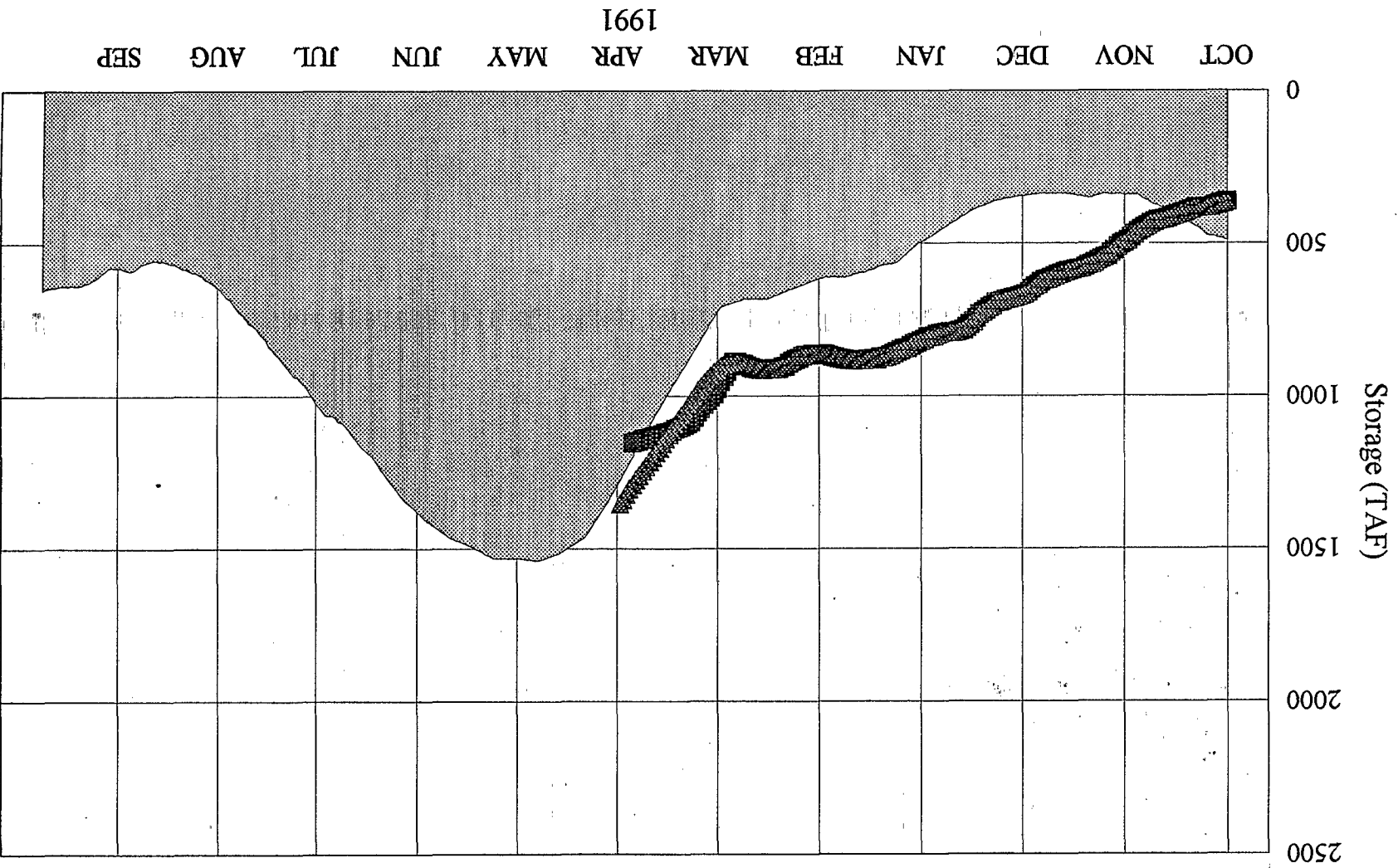
Delta Export Limits

1991 Game 4



San Luis Reservoir Storage

1991 Game 4



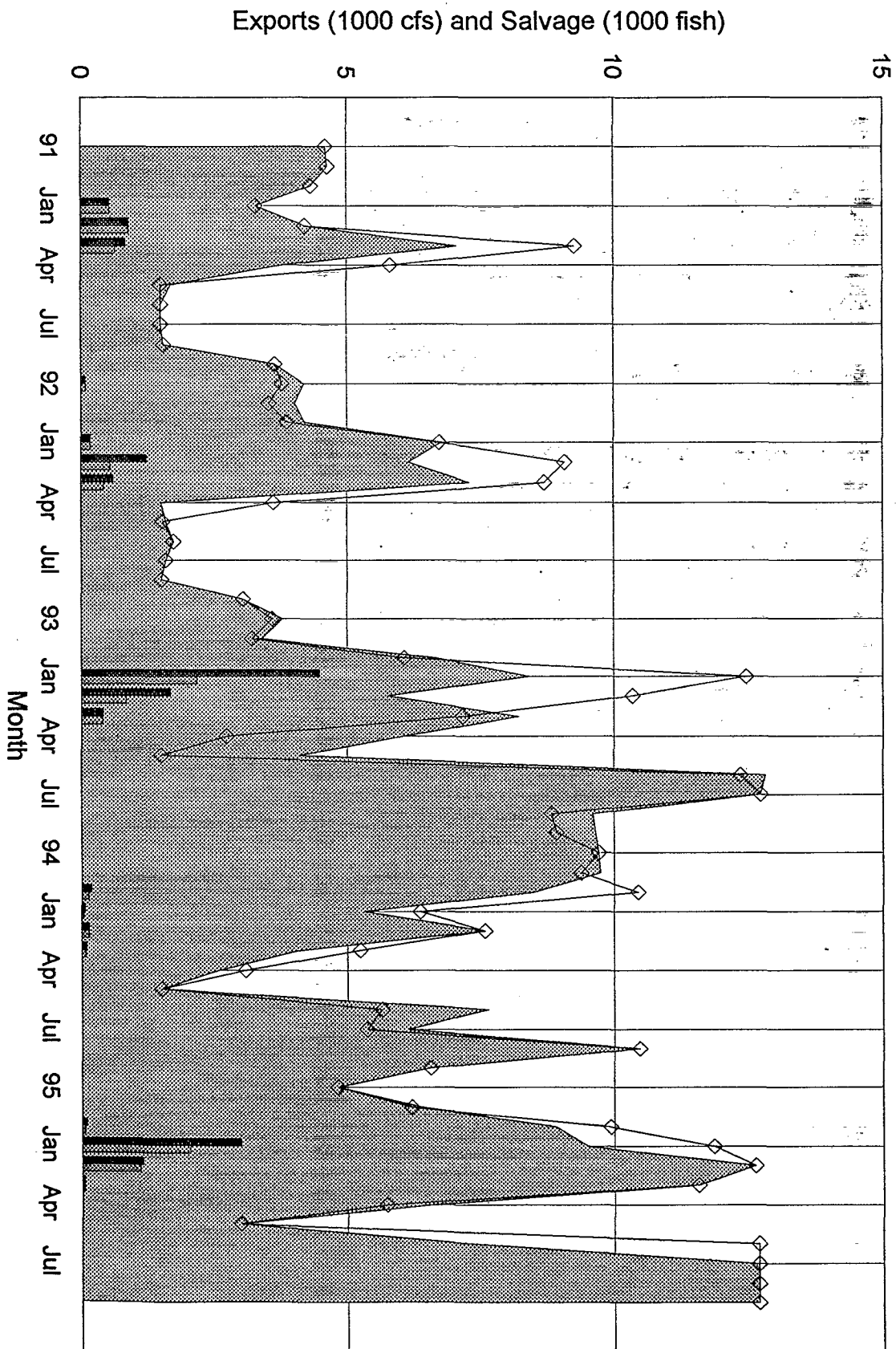
■ Model New
 ▲ Model Baseline
 ■ Historical Storage

OCT 1991
 NOV
 DEC
 JAN
 FEB
 MAR
 APR
 MAY
 JUN
 JUL
 AUG
 SEP

Storage (TAF)

0
 500
 1000
 1500
 2000
 2500

Adult Delta Smelt Benefits from EWA Game 4



Essential EWA Assets

- A monetary account for water purchases
 - \$40M to \$50M at start of Stage 1- \$20M to \$30M at end of Stage 1
- Ability to purchase and transfer water at a reasonable cost and at needed times
 - Up to 100 TAF Sacramento River System
 - Up to 150 TAF San Joaquin River System
 - Up to 250 TAF in Export Areas
- Ability to Vary Standards
- Adequately screened project water diversion intakes in south Delta
- JPOD with no State and federal sublimits



Essential EWA Assets

(con't)

- Access to storage upstream and south of Delta and Delta Islands
 - Utilize available storage in existing reservoirs; **San Luis is key** with other SWP and CVP storage.
 - Late in Stage 1 need storage closer to export pumps for flexibility. Wedd Tract and Bacon/others Islands with a direct connection to bacon and CCF
- Increased permitted export capacity
 - Increased Banks 8,500 cfs pumping window In early Stage 1.
 - Expand Banks permitted capacity to 10,300 cfs by end of Stage 1
- Access groundwater
 - At least 600 TAF in SOD area.
 - Facilities to increase recharge and extraction rates



General Conclusions

- For a given amount of water, EWA could be more effective in reducing fish entrainment than prescriptive standards
- For a given level of protection, EWA could allow more exports than prescriptive standards
- Effectiveness of EWA would be greater with larger and greater diversity of assets.
- Various assets provided greater values than others.

General Conclusions

(con't)

- Uncertainties in application of EWVA will require experiments in Stage 1.
- Burden of fish population recovery should not be solely that of EWVA.
- EWVA provides synergies of benefits between upstream and Delta Actions.
- EWVA could provide incidental benefits to water supply and water quality.

Issues from Simulations

- While the EWA generally improved upon the water supply benefits over the baselines, the EWA did not make up the deficits.
- EWA assets would have to increase proportional to future demand, if the level of environmental protection is to be maintained.
- EWA was not used to improve water quality.

Issues from Simulations (con't)

- Disagreement on existing and future environmental protections needed in the Delta and EWA priorities of use.
- Rapid and substantial EWA debts occurred in San Luis, ability to payback in doubt.

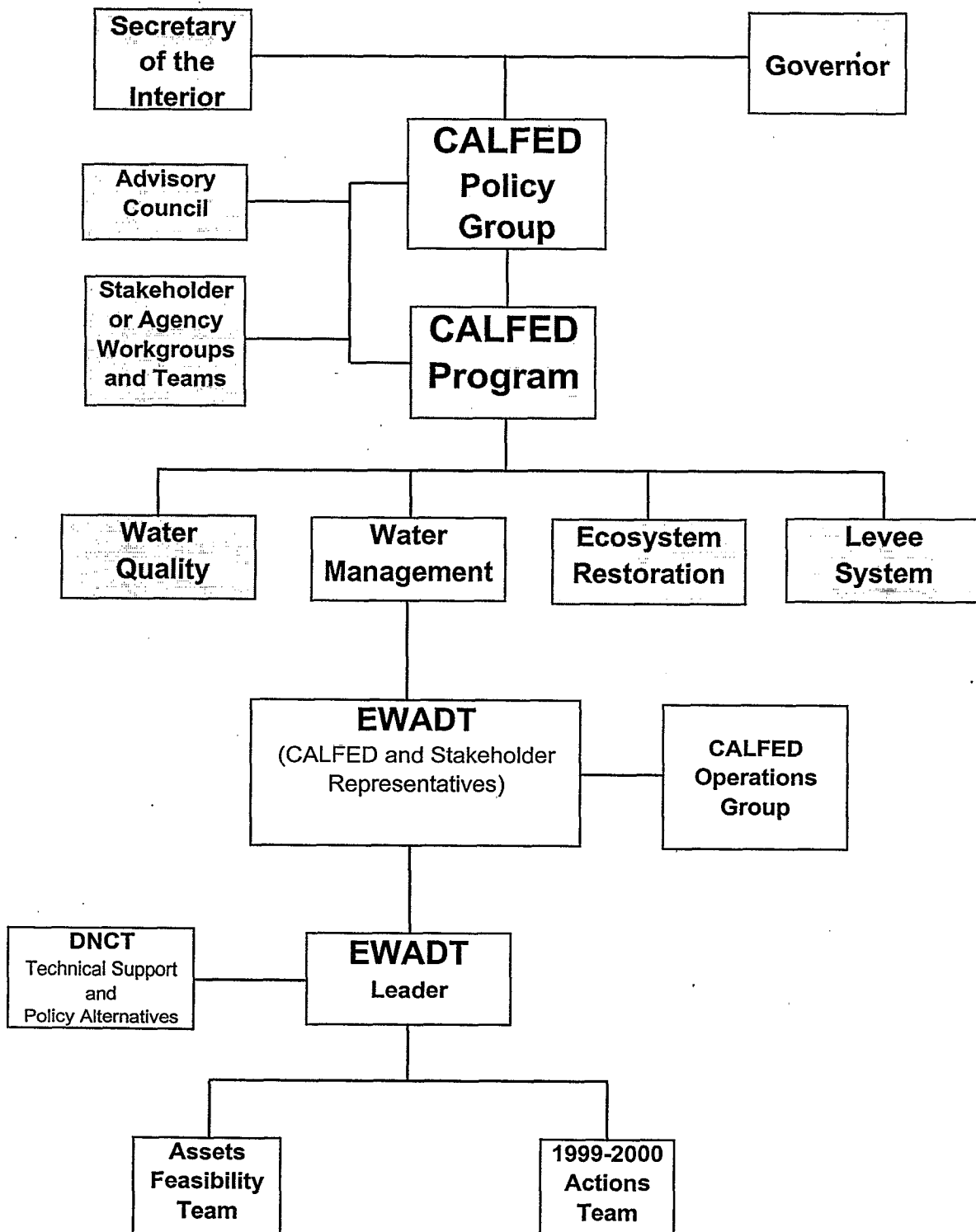


EWA Development Team (EWADT)

- Includes CALFED Policy and Stakeholder representatives.
- Develops information need for decision making
- Develops detailed EWA Strawman
- Develops proposals for EWA agreement



CALFED Environmental Water Account Development Team (EWADT)



EWADT Tasks

- Default Operating Requirements
- Relationship between the EWA and the state and federal projects
- Stage 1 assets and sharing between the EWA and Water users
- Relationship to ESA and CVPIA agencies
- Decision Making
- Financing



EWADT Leader

- Provides direction for EWA development
- Recommends task leaders for:
 - Assets Acquisition
 - Governance and decision making
 - Financing
 - 1999-2000 early development assets
- Ensures coordination with CVPIA, b(2), ERP and other programs



DNCT

- Oversees technical support
- Formulates policy options, such as governance and decision making.
- Develops options for the size and nature of the EWA



Milestones and Schedule

Form EWADT.....	Aug 18
Assign Team Leader(s).....	Aug 25
Outline Decision Making Process....	Sep15
Define Feasibility of Assets.....	Oct 1
Develop Sharing Benefits.....	Oct 1
Development Strawman.....	Nov 1
Develop Implementation Package...Dec	12

